What is claimed is:

1. A method comprising:

building a linear model of an analog fractional-N phase locked loop unit having a voltage controlled oscillator; and

determining a transfer function of a filter that is optimized according to predefined optimization criteria,

wherein said optimization criteria are related to an input to said filter and are related to an input to said voltage controlled oscillator.

2. The method of claim 1, further comprising:

including in said model impairments of one or more components of said phase locked loop unit.

3. The method of claim 1, further comprising:

including phase noise in said model.

4. The method of claim 1, further comprising:

including in said model variations of parameters of said phrase locked loop unit from nominal values.

5. The method of claim 1, wherein determining said transfer function includes determining said transfer function to be optimized according to said predefined optimization criteria that includes a mean squared error of an input to said filter and an input to said voltage controlled oscillator.

6. The method of claim 1, wherein determining said transfer function includes determining said transfer function to be optimized according to said predefined optimization criteria that includes spectral cleanliness of an output of said voltage controlled oscillator.

7. The method of claim 1, further comprising:

selecting a topology for said transfer function.

8. The method of claim 1, wherein determining said transfer function includes determining a finite impulse response transfer function.

9. The method of claim 1, wherein determining said transfer function includes determining an infinite impulse response transfer function.

10. A method comprising:

adjusting digital values of a filter to compensate for variations in an analog fractional-N phase locked loop unit.

11. The method of claim 10, wherein adjusting said digital values includes adjusting said digital values to compensate at least for variations in voltage, temperature, aging, or any combination thereof.

12. The method of claim 10, wherein adjusting said digital values includes adjusting said digital values to compensate at least for variations of parameters of said phase locked loop unit from nominal values.

13. The method of claim 10, further comprising:

determining adjusted digital values so that a transfer function of said filter is optimized according to predefined optimization criteria.

14. A fractional-N sigma-delta modulator comprising:

a filter having a finite impulse response transfer function, said filter coupled to an input of a sigma-delta converter; and

a fractional-N phase locked loop unit coupled to an output of said sigma-delta converter.

15. The fractional-N sigma-delta modulator of claim 14, wherein said transfer function is substantially equivalent to a transfer function of a minimum mean squared error equalizer.

16. The fractional-N sigma-delta modulator of claim 14, wherein digital values of said filter are to be adjusted so that said transfer function is optimized according to predefined optimization criteria.

17. The fractional-N sigma-delta modulator of claim 16, wherein said optimization criteria includes a mean squared error of an input to said filter and an input to a voltage controlled oscillator of said fractional-N phase locked loop unit.

18. The fractional-N sigma-delta modulator of claim 16, wherein said optimization criteria includes spectral cleanliness of an output of a voltage controlled oscillator of said fractional-N phase locked loop unit.

19. A fractional-N sigma-delta modulator comprising:

a sigma-delta converter;

a fractional-N phase locked loop unit coupled to an output of said sigma-delta converter and including a voltage controlled oscillator; and

a filter having an infinite impulse response transfer function, said filter coupled to an input of said sigma-delta converter, wherein said infinite impulse response transfer function is not an inverse of a transfer function from an output of said filter to an input of said voltage controlled oscillator.

20. The fractional-N sigma-delta modulator of claim 19, wherein digital values of said filter are to be adjusted so that said infinite impulse response transfer function is optimized according to predefined optimization criteria.

21. The fractional-N sigma-delta modulator of claim 20, wherein said optimization criteria are related to an input to said filter and are related to an input to said voltage controlled oscillator

22. The fractional-N sigma-delta modulator of claim 20, wherein said optimization criteria includes spectral cleanliness of an output of said voltage controlled oscillator.

23. A fractional-N sigma-delta modulator comprising:

an adaptive filter coupled to an input of a sigma-delta converter; and

a fractional-N phase locked loop unit coupled to an output of said sigma-delta converter.

24. The modulator of claim 23, wherein a transfer function of said adaptive filter is a finite impulse response.

25. The modulator of claim 23, wherein said fractional-N phase locked loop unit includes a voltage controlled oscillator, and wherein a transfer function of said

adaptive filter is not an inverse of a transfer function from an output of said filter to an input of said voltage controlled oscillator.

26. A communication device comprising:

a dipole antenna;

a power amplifier coupled to said dipole antenna; and

a fractional-N sigma-delta modulator coupled to said power amplifier, said fractional-N sigma-delta modulator including at least:

a filter coupled to an input of a sigma-delta converter; and

a fractional-N phase locked loop unit coupled to an output of said sigma-delta converter,

wherein a transfer function of said filter is to be optimized according to predefined optimization criteria.

27. The communication device of claim 26, wherein said transfer function is a finite impulse response.

28. The communication device of claim 26, wherein said transfer function is an infinite impulse response.

29. A communication system comprising:

a first communication device; and

a second communication device including at least:

a fractional-N sigma-delta modulator including at least:

a filter coupled to an input of a sigma-delta converter; and

a fractional-N phase locked loop unit coupled to an output of said sigma-delta converter,

wherein a transfer function of said filter is to be optimized according to predefined optimization criteria.

30. The communication system of claim 29, wherein said transfer function is a finite impulse response.

31. The communication system of claim 29, wherein said transfer function is an infinite impulse response.